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THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

AFFECTIVE FACTORS IN RECALL¹

A FEW years ago in an attractive article, entitled "Oblivescence of the Disagreeable,"² Hollingworth stated that "the canonization of saints, the apotheosis of strenuous historical characters, the obituaries of our friends, the reminiscences of childhood, all testify to this natural and universal habit of forgetting the bad and exalting the good." After citing a number of examples, referring to Colgrove's conclusions that the pleasant memories predominate over the unpleasant ones, and briefly epitomizing some Freudian doctrine, Hollingworth concludes: "The fundamental fact back of all this is that the disagreeable does oblivesce to a more striking degree than the pleasant. In art, in pedagogy, in penal procedure, in long-deferred criminal trials, and in daily life, the principle is everywhere apparent. Even in reasoning, the gratifying, confirmatory instance sticks in the mind, while the negative cases all go glimmering into oblivescence."

Later E. N. Henderson replied to Hollingworth:³ "The memory of a disagreeable experience may be agreeable, disagreeable, or indifferent." He then reports an experiment on 10 college students, each of whom was asked to relate a hundred incidents remembered in his or her life. Then each was asked to grade these incidents as agreeable, disagreeable, and indifferent. He found 55.1 per cent. of the answers were scored as agreeable, 11.8 per cent. as indifferent, and 33.1 per cent. disagreeable. He points out that the subjects perhaps tended less to name disagreeable experiences; that they probably failed to give accurately the feeling of their original experience; and that probably in the lives of most of us the agreeable incidents far

¹ The writer acknowledges his indebtedness to Miss Maude Beck and Mr. Geo. Replogle, students in the writer's class of psychology (1913-14), for conducting the experiments in schools A and B, respectively, and for aiding the writer in the tabulation of the original data; especially to Mr. Replogle who, by not following the regular instructions of the experiment, discovered the value of a short period of time for writing the random lists.

² This JOURNAL, Vol. VII., pages 709-714.

³ This JOURNAL, Vol. VIII., pages 432-437.

outnumber the disagreeable. He concludes that his figures give a negative answer to the question, "Do we forget the disagreeable?"

In the following study the chief emphasis was placed on a determination of the relative tendency to remember the thing best liked and that liked least. In all, 232 subjects from normal school, high school, and grades were tested. They were asked to write random lists of names of familiar things, such as colors, musical instruments, animals, fiction, famous women of all time, famous men of all time, etc. Then they were asked to write the name of the thing liked best of each of these classes of objects; then, the thing liked least.

Three forms of the test were given: A. Pupils of School A from high school to 4th grade were told to write as quickly as possible the names of 20 foods, 10 animals, 10 colors, 10 books, 10 musical instruments, and 10 persons. Then their papers were collected, and they were instructed to write on another sheet the name of the food liked best, without regard to whether it appeared in the random list or not. When that was written they were told to write the name of the food liked next best, and so on to the 4th like; likewise with animals, colors, etc. Then they were asked to write the name of the thing disliked most, or liked least, of each of the classes given (that of persons excepted).

B. Pupils of School B, high school, and 7th and 8th grades, were asked to write as many names of the several classes of objects as possible in a given time. The time (about one minute interval) was called when the subjects began to look about and to show hesitancy. The subjects were asked to select from their random lists the name of the thing liked best and that liked least. Three minutes had been planned for the random list, but in order to adapt the experiment more nearly to the programme of the school the experimenter limited the time as noted above. The advantage of this briefer time is obvious, for it eliminates the more disparate and chance associations. Furthermore the briefer random lists secured thereby avoided some unnecessary drudgery in handling the data.

C. Since test C (on the normal school) was given last, the writer gave the subjects only one and one half minutes in which to write each random list. These lists were, the names of foods, animals, works of fiction, famous women of all time, famous men of all time, and famous living Americans.

The records show for all three tests that the thing liked most, on the average, appears much nearer the first name in the random list than the thing liked least. Likewise the percentage of dislikes not included is always much higher than the likes not included. Without exception in all random lists, the percentages of cases of the first-like are predominantly above the median and those of the least-

like, below. For example, by school A the first-like, on the average, appeared as number 2.8 in the random list of ten names of animals; the fourth like, as number 3.9; and the least-like, as number 7.4. For color, the respective numerical positions were, 3.0, 5.5, and 6.4; for books, 3.9, 6.0, and 6.5; for musical instruments, 2.1, 3.0, 7.3. Not one omitted the first-like from the random list of animals; 9 omitted the fourth-like, and 27, the least-like. For colors, the respective figures are, 2, 8, 9; for books, 8, 16, 15; for musical instruments, 0, 5, 15. The numerical position was chosen as the measure here because the number of names in the random lists was constant (ten names). Since there was no way to determine the exact position of the first-like and the least-like not named in the random list, a conservative plan was adopted whereby such were counted as appearing one place below the last named in the random list. Therefore, because so many more of the least-likes than the first-likes were omitted from the random list, the position of the average least-like as indicated by the figures is far higher than the actual position. In schools B and C the position of the first-like and the least-like were located with reference to the median of the random lists. In these schools the random lists were limited by a definite time for their production and not by a definite number of names. Consequently, the lengths of these series varied rather widely, and, therefore, the distance from the median was relatively a more intelligible standard than the numerical position.

By 72 per cent. of the boys of school B the animal liked best from among those named in the random list appeared above the median of the list, and in only 43 per cent. of the cases the least-like from among the random list was found to be above the median of the list. On the other hand, by 20 per cent. of the boys, the first-like was below the median and the least-like was below the median in 44 per cent. of the cases. Furthermore, the first-like stood first in the random list for 31 per cent. of the boys, the least-like for 8 per cent., while the first-like appeared last in the random list in 5 per cent. of the cases and the least-like appeared last in 18 per cent. of the cases. The records for the girls were practically the same as those for the boys, *i. e.*, there was no appreciable sex difference.

As in school A no exception was found to the rule that in all random lists, of colors, foods, etc., the average position of the least-like is always lower than that of the first-like. Moreover, the average position of the first-like is always above the median, from one to two places; while with a few exceptions the average position of the least-like is below the median. But the total-average distance of the first-like above the median for all the random lists is much greater

than the average distance below the median of the least-like. The total-averages are, + 1.6 and —.5, respectively.

On the average, for all the random lists, by both sexes together, the first-like was named first in the random list by 32 per cent. of the cases and the least-like by 8 per cent.; while the first-like was named last by 5 per cent. and the least-like by 17 per cent.

The records of the 73 normal school students almost unanimously endorse the results obtained from schools A and B. However, the percentage of cases whose first-like appeared above the median of the random list was about the same as the percentage of cases whose least-like appeared below the median. It will be remembered that in school C the two choices were made regardless of the random list.

Comparing the positions of the first-like and the least-like in reference to each other, one finds in school A that the least-like appeared below the first-like in the random list of animals, for example, in 84 per cent. of the cases, while the first-like appeared below the least-like in 12 per cent. of the cases. The respective figures for school B are 69 and 31; for school C, 79 and 18. On the average, the least-like is 4.9 places below the first-like for school A; for schools B and C it is 2.2 and 4.4, respectively.

Variability from the numerical position was computed for school C, which shows, on the average, an a.d. of about three places for the several things, and about as great variation for the likes as for the dislikes. Likewise the average number of random names given by this group was found to range from 6.7 to 15.5. It is obvious that the larger the group from which the random lists were selected the greater the length of the random lists; for example, the average number of famous women named was only 6.7, while in the same time 10.4 famous men were named.

It should be noted that while the normal-school girls were asked for a random list of foods, most gave specific names for each; but in naming their first-likes there was such a tendency at vagueness and generalities that the writer abandoned his attempt fully to classify the data. For example, 9 out of 71 named "fruits" as the first choice of foods, 21 named "vegetables," while practically all these specified certain fruits and vegetables in the random lists. However, one finds no such predominance of general classes of dislikes. The highest was "fatty things" by four cases, and three named "soups." This difficulty was scarcely noticeable with schools A and B. Probably the stronger and more numerous habits of short-cut methods and classification by the normal-school girls may offer some explanation. Tendency to generalize was slightly shown in reference to fiction; a few stated that they liked or disliked a certain author's books,

for example, while they specified definite names of books in their random lists.

A study was made of the number of different items named as chief-likes and least-likes by 71 normal-school girls, with the following results:

	No. Item as Greatest-like	No. as Least-like
Animals	9	24
Fiction	53	52
Famous women	27	23
Famous men	22	28
Famous Americans	31	23

By the 64 children of school A the respective figures are: for foods, 27 and 32; for colors, 13 and 9; for musical instruments, 8 and 11. One could not say from these records whether people vary more as to their greatest-likes or as to their least-likes. However, there seems to be a difference in the distribution of these items; the leading item liked most appeared much more frequently on the whole than the leading item liked least. For example, "dog" was the foremost first-like of animals (by 23 cases) and "snake" the foremost least-like (by 18 cases). For fiction the respective figures are 5 and 5; for "famous women," 26, 18; for "famous men," 36, 16; for foods, 9, 6; and for colors, 23, 9.

Appropos of the statement made above that the least-like is more often omitted than the first-like from the random list, is the fact that "Benedict Arnold" named by one out of four as the least-liked American was given in the random list by only three cases. Such names that call out strong emotional distastes seem especially to oblivesce.

Of course it has been assumed in this study that, as a rule, when one writes a random list of names of things one will tend to write down first those words most readily recalled. All other things being equal, it is safe to assume that the words which will first come to mind are those which from habit most readily offer a response to the situation, "Name-of-animals, etc." It must be admitted, however, that many obvious factors interfere in such tests as the above, and that when one writes a random list, each word when named tremendously aids in the determination of the next word to be recalled, so that as one would expect, one finds in the records many cases where the appearance of a name obviously suggested a whole group of names. However, one would expect these difficulties to be about evenly distributed among the first-likes and the least-likes.

The difficulties noted above would be especially true where the list of words were written slowly or showed selection; therefore a brief time assigned for the random lists seems desirable. Further-

more, limiting the chief-likes and least-likes to the random list contributes so much in the handling of the data, that in the long run, it seems to be the superior method. If the subjects were unexpectedly called upon for these random lists a second or a third time after a few weeks' interval, the reliability of such lists could be pretty accurately determined, and some interesting records on personal consistency could be obtained.

In addition to the stated test given in school C, the writer finally returned the random lists and asked the subjects to grade by numerals the order of preference of the names of the several lists, and to indicate with which number their dislikes began. But so many names were assigned the same rank by each subject, that these records were of little value. It would be a simpler method to have the subjects, after stating their chief-like and least-like, in general, select from their random list their chief-like and least-like, and finally to have them cut their random lists in slips and arrange these slips in order of preference, indicating where their dislikes begin. Thereby one would have three mutually corroborating tests, and a definite record of the number, as well as the order of the likes and dislikes, recalled in the random lists. At best, one can only hope to show general tendencies.

In conclusion it seems safe to assert that, as a rule, one tends to recall the thing best-liked more readily than that least-liked. From this it is pretty safe to infer that one tends to remember the agreeable rather than the disagreeable. However, in the interpretation of the above data and in the conclusions drawn by Hollingworth from his striking examples, it has been taken for granted that what one expresses is the measure of what one remembers, and that what one does not express is the measure of what one forgets. If we were not social creatures and subject to social constraint, this assumption would be safe. But we are social creatures and have social memories. What we recall at any particular moment is partially determined by the social import of that part of our experience recalled. Certainly what we express of our past experience at any particular moment is selected by our social relations at that time.

Our natural tendency to please others and to win their consequent approval makes us select from our experiences those things which we consider to be most agreeable to our audience and spectators. In reference to the immediate ends those experiences selected for expression will, perhaps, always be most agreeable to us; but independent of the end, *i. e.*, in and of themselves, they may not be agreeable. Indeed, they may be positively disagreeable; for example, a bit of experience which in recall has always been disagreeable to me, may, when related to another, give me a very agreeable experience at

the moment of my telling, if it elicits an agreeable response from my audience, especially if the desire for such a response is uppermost. But this relating of the experience need not make the once disagreeable experience permanently agreeable. *Per se* it may be as disagreeable to the relator as ever. The individual and the social values of our experiences do not necessarily coincide.

The "canonization of saints, apotheosis of strenuous historical characters, obituaries of our friends," etc., as cited by Hollingworth, are instances of social memories. No one would argue that social memories are composites of individual memories, that the records and traditions of what we call our history are merely sum-totals of all individuals' memories. Probably it would be safer to say that the social impress left by earlier times is a resultant of social perception and expression rather than a sum-total of selective individual memories.

The first account that went to make up what we know about the past depends foremost on the facts and qualities attended to by the first recorder and narrator. What he related depended upon what he had perceived and what his social ideals made most agreeable for him to relate. What he perceived, in turn, was partially determined by his fellows. Therefore the selectiveness of his perception, and most of all the selectiveness of his record and narration, were socially determined. In other words, the social group largely determines what we shall perceive to be related and determines what we shall relate.

As to "the obituaries of our friends," of course we write and say the most agreeable things we can recall. We seek for comfort then and we know our fellow mourners seek for comfort, too. We exalt the virtues of the dead because it gives us comfort first to think upon their virtues; then this in turn reflects much comfort in the comfort it contributes to our fellow mourners. It is not a matter of memory so much as a matter of expression, for well we know that even while we search for most agreeable memories of the dead many disagreeable memories will often haunt us.

And so with nearly all the instances that Hollingworth relates there obtain so many complex social factors that while on the surface these instances seem to be proof positive of a "universal habit of forgetting the bad and exalting the good," yet all they do prove is that we tend to express the agreeable and neglect and inhibit expression of the disagreeable.

While in the make-up of the random lists in the writer's study the social factor does not always seem to be so prominent as in Hollingworth's examples, yet in the last analysis, the writer's data only

show that the agreeable more readily finds expression, as a rule, than the disagreeable.

Of course there is biological evidence to make one believe that memories tend to vanish into oblivescence when they lose expression; and probably in the long run memory and expression are commensurate. However, it must be remembered that all types of past experiences seek expression, whether good or bad, in spite of their repression. The psychoanalysts have done much to emphasize the fact that while one strives to check and to forbid expression of one's disagreeable experiences, the latter tend somewhere to find expression, as in dreams, for instance. And so while Hollingworth calls Freud to support of his theory, Freud here can well be cited to show the fallacy of Hollingworth's assumption.

Furthermore, disagreeable things become things to be avoided. In all learning it is well to remember the unsuccessful and consequent disagreeable reactions so they will not be repeated. In the welfare of the individual, in all social progress, it is very essential and most natural to remember, in order to avoid, the useless and the hindering responses. The fact then that we avoid and neglect to do some things does not necessarily mean that they have been forgotten; on the other hand, it may be conclusive proof that they have been remembered. Henderson put it well: "We forget not so much the disagreeable ideas as useless ideas."

Finally, if the assumption upon which this study was pursued is valid, the rule obtained by the writer's figures holds good only for about 80 per cent. of the subjects tested. How about the other 20 per cent., especially those whose least likes were named first in the random lists? Probably in these cases the disagreeable in the former experiences were attended by rather strenuous emotional disturbances which contributed toward a wide variety of neural discharge, therefore increasing the possible connections or associates with other things which might be more vital and much more agreeable; so that in the recall, the wide number of by-associates would increase the possibility of recall of the obviously disagreeable. The question still unanswered is, How far does one's silence measure one's forgetting and how far does one's expression measure one's recall?

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